

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3, 5-7, 9-12, and 14-23 are rejected under 35 U.S.C. 103(a) as being obvious over Sato et al (US 5,245,154), in view of Zottu (US 3,496,645) both previously cited.

Sato shows a method of conditioning a substrate, the method including the steps of: a) subjecting the substrate to RF energy in a constrained environment having a pressure above atmospheric for a time sufficient to heat at least part of the moisture contained in the substrate (col. 8, lines 29-41; and b) reducing pressure in the constrained environment in a manner causing the moisture within the substrate to boil or evaporate (see Figures 1-4 and col. 6, line 38 – col. 10, line 68 and Examples 1 and

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2 in col. 11-12). Therefore it shows every feature except for the explicit showing that the moisture contained in the substrate is heated to a temperature of or above the boiling point of water at ambient pressure. However, Zottu discloses heating the interior of the wood by RF source to a temperature higher than the boiling of the moisture of the wood is well known in the art (see Figures 1-5, the abstract and col. 1, line 72 – col. 3, line 32). It would have been obvious to an ordinary skill in the art at the time of invention to modify Sato to heat the moisture in the wood to a temperature at or above the boiling of water to achieve efficient and better wood treatment result, in view of the teaching of Zottu. In regard to claims 2-3, the exact frequency, pressure and temperature would be an obvious matter of engineering expediency depending on the type of material being heat-treated and can be easily determined through routine experimentation. In regard to claim 23, Sato also shows the step of incorporating a composition in the wood for the purpose of preservation to be well known (see col. 2, line 22 – col. 3, line 14).

Response to Amendment

3. Applicant's arguments filed 11/13/2009 have been fully considered but they are not persuasive.

4. Applicants argue that Sato teaches heating a wood material inside a constrained environment **below or at atmospheric pressure**. This is not found persuasive. In Sato's reference only mentioned pressure reduction state, but it does not have to be below or at atmospheric. For example, Sato discloses the pressure in the tank 7 is operated to reduce 1 to 100 Torr (0.0193 PSI to 1.93 PSI) or less, preferably 30 to 60

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Torr (0.58PSI to 1.16PSI) (col. 8, lines 29-34). Sato also discloses the temperature of water in the tank 7 can be at 100⁰C or more (col. 8, lines 37-41). The pressure in the tank7 of Sato is above the atmospheric. Further, the pressure above atmospheric as disclosed in the present application is between about 0.5 PSI and 40PSI (see par. 0060). Therefore, Sato still meet the claimed limitations.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T. Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 5:00Pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang T Van/
Primary Examiner, Art Unit 3742
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